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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,217	01/23/2002	Timothy M Coker	124-859	6027

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EXAMINER

STULTZ, JESSICA T

ART UNIT	PAPER NUMBER
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2873

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/868,217

Applicant(s)

COKER ET AL.

Examiner

Jessica T Stultz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 6) ☐ Other: _____

DETAILED ACTION***Specification***

The following guidelines illustrate the preferred layout and content for patent applications. These guidelines are suggested for the applicant's use. The following section headings are preferably used within the specification where appropriate and each of the numbered items should appear in upper case, without underlining or bold type, as section headings.

1. Background of the Invention.
2. Summary of the Invention.
3. Brief Description of the Drawings.
4. Detailed Description of the Preferred Embodiments.

The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

The specification is objected to as failing to comply with 37 CFR 1.84(p)(5) because the following reference signs are not mentioned in the description: 14, 16, 17, 21, 22, and 149. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the specification will not be held in abeyance.

The disclosure is objected to because of the following informalities: Figures 13a, 13b, and 17 are not described in the "Brief Description of the Drawings" section of the specification.

Appropriate correction is required.

Claim Objections

Claims 6-12 and 18-20 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 6-12 and 18-20 have not been further treated on the merits.

Claim 13 is objected to because of the following informalities: the phrases “in a first step selected” should be “in a first step, selected” and “in a second step the selected” should be “in a second step, the selected”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 4-5, and 12-13 (and therefore dependent claims 3, 6-11, and 14-20) are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 2 recites the limitation "of said first set" and “of said second set” of claim 1. There is insufficient antecedent basis for this limitation in the claim. Specifically there is no prior mention of “a first set” or “a second set” in claim 1 or in the beginning lines of claim 2. Therefore, it is unclear as to what part of the controlling method is to be defined by the first and second set. For purposes of examination, these phrases are assumed to be “of a first set” and “of a second set”.

Regarding claims 4-5, it is unclear as to the meaning of the phrase “the voltage on the spaced electrode and the voltage applied to each element of the array are all shifted substantially

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simultaneously by the same amount and in the same direction relative to a reference voltage”.

Further clarification is needed.

Regarding claim 12, this claim has been made dependent on itself, making it unclear as to the actual dependency. Also, it is unclear as to what the term “dc balancing” refers to. Further clarification is needed.

Regarding claim 13, a mixture of device and method limitations in the claim by defining a device using method steps. Also, it is unclear as to the limitations of the claim since it is unclear which features of the “control means” perform the “first step” of writing and the “second step” of erasing.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crossland et al US 5,774,104 (herein referred to as Crossland et al ‘104) in view of Crossland et al US 5,751,266 (herein referred to as Crossland et al ‘266).

Regarding claim 1, Crossland et al ‘104 discloses a method of controlling an array of optical elements (Column 3, lines 42-51, wherein an array of pixel electrodes “25” are controlled, Figure 3) in a succession of cycles to alter their states according to respective ones of a series of input data sets (Column 4 lines 31-67, wherein a cycle of altering the states of pixel electrodes based on input data is disclosed), each cycle comprising a first step wherein elements

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of an optically blank or uniform array are written as determined by a respective data set (Column 4, lines 31-46), and a second step wherein elements are erased to restore a blank array prior to another cycle (Column 4, lines 46-67), but does not specifically disclose that only selected elements of the array are determined by a data set and then selectively erased to restore a blank array. However, Crossland et al '266 teaches that in a controlled array of optical elements, selective elements are written based on a respective data set for the purpose of enabling row of pixels to be addressed with a shorter line address time (Abstract and Claim 1) and it would be obvious that selective erasing can occur as well. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the method of controlling an array of optical elements of Crossland et al '104 further include selective elements being written based on a respective data set and then selectively erased since Crossland et al '266 teaches that in a controlled array of optical elements, selective elements are written based on a respective data set for the purpose of enabling row of pixels to be addressed with a shorter line address time and it would obvious that selective erasing can occur in these same selected elements.

Regarding claim 2, Crossland '104 further discloses that the array of optical elements to which the method is applied comprises a corresponding array of addressable active elements (Column 3, lines 5-25, wherein the elements are pixel electrodes "25", Figure 2), and an electrode spaced from the corresponding array (Column 3, lines 5-25, wherein the spaced electrode is front plane electrode "24", Figure 2), each optical element being defined between the spaced electrode and a corresponding active element (Column 3, lines 5-25), and wherein during the first step the active elements of a first set and the spaced electrodes electrode are operated to apply a first potential difference across the selected optical elements of the first set (Column 3,

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line 42-Column 4, line 30, Figure 3), and during the second step the active elements of a second set, the first and second potential differences having opposite signs (Column 4, lines 9-22).

Regarding claim 3, it is further inherent from Crossland '104 that the first and second potential differences have equal amplitudes, this being reasonably based upon the voltages being "equivalent oppositely directed potential differences" which would mean they have the same amplitude and varying directional signs (Column 4, lines 9-22).

Regarding claim 4, it is further inherent from Crossland '104 (as can be understood), that between the first and second steps the voltage on the spaced electrode and the voltage applied to each element of the array are all shifted substantially simultaneously by the same amount and in the same direction relative to a reference voltage, this being reasonably based upon the similarity in structure and function of the reference and the claimed invention and the description of a short step before the blanking process (Column 4, lines 46-67).

Regarding claim 5, Crossland '104 further discloses that the array of optical elements to which the method is applied comprises a corresponding array of addressable active elements (Column 3, lines 5-25, wherein the elements are pixel electrodes "25", Figure 2), and an electrode spaced from the corresponding array (Column 3, lines 5-25, wherein the spaced electrode is front plane electrode "25", Figure 2), each optical element being defined between the spaced electrode and a corresponding active element (Column 3, lines 5-25), and it is inherent (as can be understood) that between the first and second steps the voltage on the spaced electrode and the voltage applied to each element of the array are all shifted substantially simultaneously by the same amount and in the same direction relative to a reference voltage, this being

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reasonably based upon the similarity in structure and function of the reference and the claimed invention and the description of a short step before the blanking process (Column 4, lines 46-67).

Regarding claim 13, Crossland '104 discloses an electro-optical arrangement comprising an array of electro-optic element and control means responsive to a series of input data sets (Column 3, lines 42-51, wherein an array of pixel electrodes "25" are controlled, Figure 3), the control means being arranged to respond to each data set (Column 4 lines 31-67, wherein a cycle of altering the states of pixel electrodes based on input data is disclosed) so that starting with an optically blank or uniform array of elements in a first step, elements are written as determined by the data set (Column 4, lines 31-46), and in a second step, the elements are erased to revert to a blank array prior to writing elements as determined by a successive data set (Column 4, lines 46-67), but does not specifically disclose that only selected elements are written by the data set and then selectively erased. However, Crossland et al '266 teaches that in a controlled array of optical elements, selective elements are written based on a respective data set for the purpose of enabling row of pixels to be addressed with a shorter line address time (Abstract and Claim 1) and it would be obvious that selective erasing can occur as well. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the array of electro-optic elements of Crossland et al '104 further include selective elements being written based on a respective data set and then selectively erased since Crossland et al '266 teaches that in a controlled array of optical elements, selective elements are written based on a respective data set for the purpose of enabling row of pixels to be addressed with a shorter line address time and it would be obvious that selective erasing can occur in these same selected elements.

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Regarding claims 14-15, Crossland et al '104 further discloses that the array of electro-optic elements is defined by corresponding pixel electrodes of an active semiconductor backplane (Column 1, lines 9-27 and Column 2, line 60-Column 3, line 24, Figure 2, wherein the pixel electrodes are "25" and the active semiconductor backplane is "23").

Regarding claim 16, Crossland et al '104 further discloses that the electro-optic elements comprise liquid crystal material located between the pixel electrodes and a spaced electrode (Column 2, line 60-Column 3, line 24, Figure 2, wherein the liquid crystal material is "20", the pixel electrodes are "25" and the spaced electrode is front electrode "24").

Regarding claim 17, Crossland et al '104 further disclose that the spaced electrode is a single electrode common to all the electro-optic elements (Column 3, lines 5-24, wherein the spaced electrode is "24" and is common to all electro-optic elements, Figure 2).

Conclusion

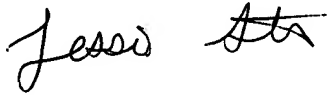
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ichinose et al is cited as being some similar structure to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica T Stultz whose telephone number is (703) 305-6106. The examiner can normally be reached on M-Th 7:30-5, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 703-308-4883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A handwritten signature in cursive script, appearing to read "Jessica Stultz".

Jessica Stultz
June 19, 2003

A handwritten signature in cursive script, appearing to read "Georgia Epps".

Georgia Epps
Supervisory Patent Examiner
Technology Center 2800